AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A wireless transmission system in which a plurality of wireless stations each transmit a signal to a receiving station, ~~wherein~~ and a path diversity system is formed by ~~a~~ at least one transmitter-side wireless station, a multi-path channel and the receiving station, the wireless transmission system comprising:

a transmission timing control section for determining a transmission start ~~timing,~~ timing at which to start ~~the signal~~ transmission of a signal, the transmission start timing ~~to be~~ being a timing obtained by delaying a reference timing ~~to be a reference~~ for the signal transmission by a predetermined delay amount;

a transmitting section for transmitting the signal at the transmission start timing determined by ~~the~~ said transmission timing control section; and

a receiving section provided in the receiving station for receiving the transmitted signal,

wherein the predetermined delay amount is determined so ~~that:~~ that 1) signals are received by ~~the~~ said receiving section at a plurality of signal-receiving timings; 2) ~~the~~ a number of signal-receiving timings is less than or equal to a predetermined maximum number of effective branches; 3) a difference between the plurality of signal-receiving timings is greater than or equal to a predetermined delay resolution; 4) and a difference between a maximum value and a minimum value of the plurality of signal-receiving ~~timing~~ timings is less than or equal to a predetermined maximum delay, and

when a number of transmitter-side wireless stations is larger than the predetermined maximum number of effective branches, the number of signal-receiving timings at which the receiving station receives signals is made equal to the predetermined maximum number of effective branches~~delay~~.

2. **(Currently Amended)** The wireless transmission system according to claim 1, wherein the predetermined maximum number of effective branches, the predetermined delay resolution and the predetermined maximum delay are set to values such that a plurality of delayed waves ~~can be~~ are received with path diversity.

3. **(Currently Amended)** The wireless transmission system according to claim 1, wherein:

said transmission timing control section and ~~the~~ said transmitting section are provided in ~~the~~ each wireless station; and

the reference timing stored in each wireless station is a predetermined timing, and the plurality of wireless stations store the same reference timing.

4. **(Currently Amended)** The wireless transmission system according to claim 1, ~~wherein: the wireless transmission system~~ further ~~comprises~~ comprising:

a transmitting station for transmitting, to the plurality of wireless stations, a signal to be transmitted to the receiving station;

~~the~~ said transmitting station ~~includes~~ including a transmitter signal transmitting section for transmitting, to the plurality of wireless stations, ~~a~~ the signal to be transmitted to the receiving station;

~~the~~ said transmission timing control section and ~~the~~ said transmitting section are provided in ~~the~~ each wireless station;

~~the~~ each wireless station includes:

a relay receiving section for receiving ~~a~~ the signal transmitted by the transmitter signal transmitting section; and

a timing detection section for detecting a timing at which the signal is received by the relay receiving section;

~~the~~ said transmission timing control section determines the reference timing to be the timing detected by the timing detection section; and

~~the~~ said transmitting section transmits a signal received by the relay receiving section to the receiving station.

5. **(Currently Amended)** The wireless transmission system according to claim 3, wherein ~~the~~ said timing detection section detects a unique word contained in the signal.

6. **(Currently Amended)** The wireless transmission system according to claim 1, ~~wherein: the wireless transmission system~~ further ~~comprises~~ comprising:

a transmitting station for transmitting, to the plurality of wireless stations, a signal to be transmitted to the receiving station;

~~the~~ said transmitting station includes:

a transmitter signal transmitting section for transmitting, to the plurality of wireless stations, ~~a~~ the signal to be transmitted to the receiving station;

a delay amount selecting section for selecting the predetermined delay amount from among a plurality of candidate values;

a re-transmission start timing determining section for determining a re-transmission start timing, at which to transmit the signal to the receiving station, the re-transmission start timing ~~to be~~ being a timing obtained by delaying the reference timing by the delay amount selected by the delay amount selecting section; and

a re-transmit signal transmitting section for transmitting the signal to the receiving station at the re-transmission start timing determined by the re-transmission start timing determining section;

~~the~~ said transmission timing control section and ~~the~~ said transmitting section are provided in ~~the~~ each wireless station;

~~the~~ each wireless station includes a relay receiving section for receiving a signal transmitted by the transmitter signal transmitting section; and

~~the~~ said transmitting section transmits a signal received by the relay receiving section to the receiving station.

7. **(Currently Amended)** The wireless transmission system according to claim 1, ~~wherein: the wireless transmission system~~ further ~~comprises~~ comprising:

a transmitting station for transmitting, to the plurality of wireless stations, a signal to be transmitted to the receiving station;

~~the~~ said transmitting station includes:

a delay amount selecting section for selecting, from among a plurality of candidate values, a delay amount to be given to ~~a~~ the signal transmitted by ~~the~~ each wireless station;

a delay amount adding section for adding the delay amount selected by the delay amount selecting section to the signal; and

a transmitter signal transmitting section for transmitting, to ~~the~~ each wireless station, the signal to which the delay amount has been added by the delay amount adding section;

~~the~~ said transmission timing control section is provided in ~~the~~ each wireless station;

~~the~~ each wireless station includes:

a relay receiving section for receiving the signal to which the delay amount has been added, transmitted by the transmitter signal transmitting section;

a delay amount extracting section for extracting the delay amount from ~~a~~ the signal received from the relay receiving section;

~~the~~ said transmission timing control section determines the transmission start timing to be a timing obtained by delaying the reference timing by the delay amount extracted by the delay amount extracting section; and

~~the~~ said transmitting section transmits a signal received by the relay receiving section to the receiving station.

8. **(Currently Amended)** The wireless transmission system according to claim 1, ~~wherein: the wireless transmission system~~ further ~~comprises~~ comprising:

a transmitting station for transmitting, to the plurality of wireless stations, a signal to be transmitted to the receiving station;

~~the~~ said transmission timing control section and ~~the~~ said transmitting section are provided in ~~the~~ said transmitting station;

~~the~~ said transmitting station includes a delay amount selecting section for selecting, from among a plurality of candidate values, a delay amount to be given to ~~a~~ the signal transmitted to each wireless station;

~~the~~ said transmission timing control section determines the transmission start timing to be a timing obtained by delaying the reference timing by the delay amount selected by the delay amount selecting section;

~~the~~ said transmitting section transmits the signal to ~~the~~ each wireless station at the transmission timing; and

~~the~~ each wireless station includes:

a relay receiving section for receiving a signal transmitted from ~~the~~ said transmitting station; and

a relay transmitting section for transmitting the signal received by the relay receiving section to the receiving station.

9. **(Currently Amended)** The wireless transmission system according to claim 7, wherein:

the plurality of wireless stations are arranged so that wireless stations located within a predetermined distance from each other have communication ranges partially overlapping with each other;

~~the~~ said transmitting station further includes a delay amount adjusting section for adjusting the delay amount so that signals transmitted from ~~the~~ wireless stations that are assigned the same delay amount as the delay amount selected by the delay amount selecting section arrive at the receiving station at the same timing;

the delay amount adding section produces a delay signal indicating the delay amount adjusted by the delay amount adjusting section; and

~~the~~ said receiving section receives signals transmitted from wireless stations that are adjacent to each other at different timings.

10. **(Currently Amended)** The wireless transmission system according to claim 8, wherein:

the plurality of wireless stations are arranged so that wireless stations located within a predetermined distance from each other have communication ranges partially overlapping with each other;

~~the~~ said transmitting station further includes a delay amount adjusting section for adjusting the delay amount so that signals transmitted from ~~the~~ wireless stations that are assigned the same delay amount as the delay amount selected by the delay amount selecting section arrive at the receiving station at the same timing;

the transmission timing control section determines the transmission start timing to be a timing obtained by delaying the reference timing by the delay amount adjusted by the delay amount adjusting section; and

~~the~~ said receiving section receives signals transmitted from wireless stations that are adjacent to each other at different timings.

11. **(Currently Amended)** The wireless transmission system according to claim 9, wherein the plurality of wireless stations are arranged in a linear pattern.

12. **(Currently Amended)** The wireless transmission system according to claim 10, wherein the plurality of wireless stations are arranged in a linear pattern.

13. **(Currently Amended)** The wireless transmission system according to claim 11, wherein the plurality of wireless stations are formed into ~~there are~~ a plurality of groups of wireless stations, each group of ~~including~~ wireless stations is arranged in the linear pattern, and ~~the~~ each ~~groups~~ group of wireless stations are arranged parallel to each other.

14. **(Currently Amended)** The wireless transmission system according to claim 12, wherein the plurality of wireless stations are formed into ~~there are~~ a plurality of groups of wireless stations, each group ~~including~~ of wireless stations is arranged in the linear pattern, and the groups of wireless stations are arranged parallel to each other.

15. **(Original)** The wireless transmission system according to claim 4, wherein the number of predetermined delay amounts is equal to the maximum number of effective branches.

16. **(Original)** The wireless transmission system according to claim 1, wherein the number of predetermined delay amounts is two.

17. **(Currently Amended)** The wireless transmission system according to claim 1, ~~wherein: the wireless transmission system~~ further ~~comprises~~ comprising a delay amount selecting section for selecting the predetermined delay amount from among a plurality of candidate values;

the delay amount to be selected by ~~the~~ said delay amount selecting section is determined in advance; and

~~the~~ said transmission timing control section determines the transmission start timing based on the delay amount selected by the delay amount selecting section.

18. **(Currently Amended)** The wireless transmission system according to claim 1, ~~wherein: the wireless transmission system~~ further ~~comprises~~ comprising:

a delay amount selecting section for randomly selecting the predetermined delay amount from among a plurality of candidate values; and

~~the~~ said transmission timing control section determines the transmission start timing based on the delay amount selected by ~~the~~ said delay amount selecting section.

19. **(Original)** The wireless transmission system according to claim 1, wherein an orthogonal frequency division multiplexing scheme is used as the modulation scheme and the demodulation scheme.

20. **(Currently Amended)** The wireless transmission system according to claim 1, wherein a phase shift keying with varied phrase (PSK-VP) scheme is used as the modulation scheme.

21. **(Currently Amended)** A wireless station for use in a wireless transmission system that includes ~~in which~~ a plurality of wireless stations that each transmit a signal to a receiving station~~, wherein~~ and a path diversity system that is formed by ~~a~~ at least one transmitter-side wireless station, a multi-path channel and the receiving station, the wireless station comprising:

a transmission timing control section for determining a transmission start timing, at which to start the ~~signal~~ transmission of a signal, the transmission start timing ~~to be~~ being a timing obtained by delaying a reference timing ~~to be a reference~~ for the signal transmission by a predetermined delay amount; and

a transmitting section for transmitting the signal at the transmission start timing determined by ~~the~~ said transmission timing control section,

wherein the predetermined delay amount is determined so ~~that:~~ that 1) signals are received by the receiver side at a plurality of signal-receiving timings; 2) ~~the~~ a number of signal-

receiving timings is less than or equal to a predetermined maximum number of effective branches; 3) a difference between the plurality of signal-receiving timings is greater than or equal to a predetermined delay resolution; and 4) a difference between a maximum value and a minimum value of the plurality of signal-receiving ~~timing~~ timings is less than or equal to a predetermined maximum delay, and

when the number of transmitter-side wireless stations is larger than the predetermined maximum number of effective branches, the number of signal-receiving timings at which the receiving station receives signals is made equal to the predetermined maximum number of effective branches~~delay~~.

22. **(Currently Amended)** A transmitting station for use in a wireless transmission system for transmitting a signal to a receiving station via a plurality of wireless stations~~, wherein~~ and including a path diversity system ~~is~~ formed by ~~a~~ at least one transmitter-side wireless station, a multi-path channel and the receiving station, the transmitting station comprising:

a delay amount selecting section for selecting, from among a plurality of predetermined delay amounts, a delay amount to be given to a signal transmitted to each wireless station;

a transmission timing control section for determining a transmission start timing, at which to start the ~~signal~~ transmission of a signal, the transmission of the signal ~~to be~~ being a timing obtained by delaying a reference timing ~~to be a reference~~ for the signal transmission by the delay amount selected by ~~the~~ said delay amount selecting section; and

a transmitting section for transmitting the signal to ~~the~~ each wireless station at the transmission start timing,

wherein the predetermined delay amount is determined so ~~that:~~ that 1) signals are received by the receiver side at a plurality of signal-receiving timings; 2) ~~the~~ a number of signal-receiving timings is less than or equal to a predetermined maximum number of effective branches; 3) a difference between the plurality of signal-receiving timings is greater than or equal to a predetermined delay resolution; and 4) a difference between a maximum value and a minimum value of the signal-receiving ~~timing~~ timings is less than or equal to a predetermined maximum delay, and

when the number of transmitter-side wireless stations is larger than the predetermined maximum number of effective branches, the number of signal-receiving timings at which the receiving station receives signals is made equal to the predetermined maximum number of effective branches~~delay~~.

23. **(Currently Amended)** A method for use in a wireless transmission system~~, in which~~ that includes a plurality of wireless stations, ~~each transmit~~ each wireless station transmitting a signal to a receiving station~~, for transmitting a signal to the receiving station,~~ and wherein a path diversity system ~~is~~ formed by ~~a~~ at least one transmitter-side wireless station, a multi-path channel and the receiving station, the method comprising ~~the steps of~~:

determining a transmission start ~~timing,~~ timing at which to start ~~the signal transmission,~~ transmission of a signal, the transmission start timing ~~to be a~~ being a timing obtained by delaying a reference timing ~~to be a reference~~ for the signal transmission by a predetermined delay amount;

transmitting the signal at the transmission start timing determined ~~in the step of determining the transmission start timing~~; and

receiving the transmitted signal at the receiving station,

wherein the predetermined delay amount is determined so ~~that:~~ that 1) signals are received at the receiving station at a plurality of signal-receiving timings; 2) ~~the~~ a number of signal-receiving timings is less than or equal to a predetermined maximum number of effective branches; 3) a difference between the plurality of signal-receiving timings is greater than or equal to a predetermined delay resolution; and 4) a difference between a maximum value and a minimum value of the plurality of signal-receiving ~~timing~~ timings is less than or equal to a predetermined maximum delay, and

when the number of transmitter-side wireless stations is larger than the predetermined maximum number of effective branches, the number of signal-receiving timings at which the receiving station receives signals is made equal to the predetermined maximum number of effective branches~~delay~~.

24. **(Currently Amended)** A method for use in a wireless transmission system~~, in which~~ including a plurality of wireless stations wherein each wireless station ~~transmit~~ transmits a

signal to a receiving station, ~~for transmitting a signal from each wireless station,~~ and wherein a path diversity system ~~is~~ formed by ~~a~~ at least one transmitter-side wireless station, a multi-path channel and the receiving station, the method comprising ~~the steps of~~:

determining a transmission start timing, at which to start the ~~signal~~ transmission of a signal, the transmission start timing being ~~to be~~ a timing obtained by delaying a reference timing ~~to be a reference~~ for the signal transmission by a predetermined delay amount; and

transmitting the signal at the transmission start timing determined ~~in the step of determining the transmission start timing~~,

wherein the predetermined delay amount is determined so ~~that:~~ that 1) signals are received by the receiver side at a plurality of signal-receiving timings; 2) ~~the~~ a number of signal-receiving timings is less than or equal to a predetermined maximum number of effective branches; 3) a difference between the plurality of signal-receiving timings is greater than or equal to a predetermined delay resolution; and 4) a difference between a maximum value and a minimum value of the plurality of signal-receiving ~~timing~~ timings is less than or equal to a predetermined maximum delay, and

when the number of transmitter-side wireless stations is larger than the predetermined maximum number of effective branches, the number of signal-receiving timings at which the receiving station receives signals is made equal to the predetermined maximum number of effective branches~~delay~~.

25. **(Currently Amended)** A method for transmitting a signal from a transmitting station to a receiving station via a plurality of wireless stations, wherein a path diversity system is formed by ~~a~~ at least one transmitter-side wireless station, a multi-path channel and the receiving station, the method comprising ~~the steps of~~:

selecting, from among a plurality of predetermined delay amounts, a delay amount to be given to a signal transmitted to each wireless station;

determining a transmission start timing, at which to start the ~~signal~~ transmission of a signal, the transmission start timing being ~~to be~~ a timing obtained by delaying a reference timing ~~to be a reference~~ for the signal transmission by the delay amount selected ~~in the step of selecting a delay amount~~; and

transmitting the signal to ~~the~~ each wireless station at the transmission start timing,

wherein the predetermined delay amount is determined so ~~that:~~ that 1) signals are received by the receiver side at a plurality of signal-receiving timings; 2) ~~the~~ a number of signal-receiving timings is less than or equal to a predetermined maximum number of effective branches; 3) a difference between the plurality of signal-receiving timings is greater than or equal to a predetermined delay resolution; and 4) a difference between a maximum value and a minimum value of the plurality of signal-receiving ~~timing~~ timings is less than or equal to a predetermined maximum delay, and

when the number of transmitter-side wireless stations is larger than the predetermined maximum number of effective branches, the number of signal-receiving timings at which the receiving station receives signals is made equal to the predetermined maximum number of effective branches~~delay~~.